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Tiffany Turner

Date: May 23, 2001

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

HP Docket No.: 10960787-9

**Inventor(s):** C. Venkatraman, et. al. **Group Art Unit:**

**Serial No.:** **Examiner:**

**Filed:** Herewith

**Title:** EMBEDDING WEB ACCESS FUNCTIONALITY INTO A DEVICE FOR USER INTERFACE FUNCTIONS

**Continuation Application of Application**

**Serial No.:** 09/721,409

**Filed:** November 21, 2000

**Continuation Application of Application**

**Serial No.:** 09/387,278

**Filed:** August 31, 1999

**Continuation Application of Application**

**Serial No.:** 08/740,289

**Filed:** October 25, 1996

## PRELIMINARY AMENDMENT

ASSISTANT COMMISSIONER FOR PATENTS
Washington, D.C. 20231

Sir:

Prior to the examination of the above-referenced application, please amend the application as follows.

**IN THE SPECIFICATION**

On page 1, line 1, insert:

This application is a continuation of Application No. 09/721,409, filed on November 21, 2000, which is a continuation of Application No. 09/387,278, filed on August 31, 1999, now U.S. Patent No. 6,170,007, which is a continuation of Application No. 08/740,289, filed on October 25, 1996, now U.S. Patent No. 5,956,487.

On page 5, please delete the first paragraph and insert therefor the following:

A solution for providing widely accessible, low cost and enhanced user interface functions for a device is disclosed. The solution involves embedding web access functionality into the device including a web server that provides a device web page. The device includes an embedded network interface that enables access to the device web page by a web browser. A user of the web browser accesses the user interface functions for the device through the device web page. The web server functionality may be implemented with existing circuitry in a device, such as an existing processor, memory, and input/output circuitry that normally perform device-specific functions, thereby avoiding the extra cost and space required for dedicated web server hardware.

Page 11, please delete the second paragraph and insert therefor:

In one embodiment, the device 10 is a printer device wherein the processor 200 and the memory 210 perform image rendering functions and the device-specific hardware 300 includes printer hardware and associated circuitry and wherein the input/output circuitry 220 provides network access to the printer device 10. The web server functionality is embedded into the printer device 10 by providing software or firmware for the processor 200 and by utilizing space available in the memory 210 and by using the existing input/output circuitry 220 such as Ethernet circuitry to transfer HTML files.

Page 12, please delete the second paragraph and insert therefor:

In yet another embodiment, the device 10 is a washing machine wherein the processor 200 and the memory 210 perform functions for controlling wash cycles. The device-specific hardware 300 includes hardware such as motors, valves, sensors, and associated circuitry. The web server functionality is embedded into the washing machine 10 by providing software or firmware for the processor 200 and by utilizing space available in the memory 210 and by adding the input/output circuitry to the device 10.

Page 20, please delete the first paragraph and insert therefor:

The web page 18 for the printer may also include manuals, parts lists, and other associated publications. These publications may be stored within the device 10 in, for example, a nonvolatile memory, or may be referenced elsewhere via hyperlinks contained in the web page 18. These publications contain dynamic information such as updated manuals as well as new and updated software driver routines for the device 10.

**IN THE CLAIMS**

Please cancel claims 1-32 without prejudice.

Please add the following claims:

33. (New) A method for providing a web page interface for a copier, comprising:

entering a URL corresponding with the copier into a web browser;

transferring an HTTP command that specifies the entered URL, from the web browser over a communication path;

receiving the HTTP command, via the communication path, through a network interface in the copier;

recognizing the URL contained in the HTTP command as corresponding with the copier;

generating, with a web server embedded in the copier, a web page that enables control functions for the copier to be initiated from the web browser;

specifying the URL corresponding with the web browser;

transferring the web page and the specified URL from the copier via the communication path;

recognizing the specified URL corresponding with the web browser;

receiving the web page with the web browser; and

rendering the web page with the web browser.

34. (New) The method of claim 33 wherein the web page defines control buttons that enable the control functions.

35. (New) The method of claim 33 wherein the HTTP command is used to obtain information from the copier.

36. (New) The method of claim 33 wherein the HTTP command is used to obtain status information from the copier.

37. (New) The method of claim 33 wherein the HTTP command is used to transfer information to the copier.

38. (New) The method of claim 33 wherein the HTTP command is used to transfer information to the copier to control functions of the copier.

39. (New) The method of claim 33 wherein the HTTP command is used to transfer information to the copier to control operating states of the copier.

40. (New) The method of claim 33 further comprising controlling device-specific functions of the copier via a control/monitor path.

41. (New) The method of claim 33 further comprising monitoring a set of information pertaining to the copier via a control/monitor path.

42. (New) The method of claim 33 wherein the web page is transferred to the web browser using HTTP.

43. (New) The method of claim 33 further comprising periodically updating information for the web page.

44. (New) The method of claim 33 wherein the web page is generated on the fly in response to receiving the HTTP command from the web browser.

45. (New) The method of claim 33 wherein the web page is generated dynamically.

46. (New) The method of claim 33 further comprising storing the web page in a memory.

47. (New) The method of claim 33 further comprising reading the web page from a memory in response to receiving the HTTP command.

48. (New) The method of claim 33 further comprising performing device-specific functions for the copier with device-specific hardware and with a processor, and performing web server functions with the processor.

49. (New) The method of claim 33 further comprising obtaining information pertaining to the copier from device-specific hardware.

50. (New) The method of claim 33 further comprising obtaining information pertaining to the copier from device-specific hardware after receiving the HTTP command and recognizing the URL contained therein.

51. (New) The method of claim 33 further comprising obtaining information pertaining to the copier from device-specific hardware after receiving the HTTP command and recognizing the URL contained therein, and further comprising

formatting the information pertaining to the copier into HTML format to define the web page.

52. (New) The method of claim 33 wherein the web page is a HTML file.

53. (New) The method of claim 33 wherein the web page contains text, images, and a table.

54. (New) The method of claim 33 wherein the web page contains a multimedia file.

55. (New) The method of claim 33 wherein the web page contains at least one URL that specifies an additional web page located within the copier.

56. (New) The method of claim 33 wherein the web page contains at least one URL that specifies an additional web page located external to the copier.

57. (New) The method of claim 33 wherein the web page includes a hyperlink to a manual.

58. (New) The method of claim 33 wherein the web page includes a hyperlink to a publication that contains dynamic information.

59. (New) The method of claim 33 wherein the web page includes a hyperlink to a publication that contains dynamic information including an updated software driver routine for the copier.

60. (New) The method of claim 33 wherein the web page includes a hyperlink to a publication that contains dynamic information including an updated manual.

61. (New) The method of claim 33 further comprising executing a set of web browser software with a computer system.

62. (New) The method of claim 33:

wherein the web browser is in a client computer system;

wherein specifying the URL corresponding with the web browser comprises specifying the URL of the client computer corresponding with the web browser; and

wherein recognizing the URL corresponding with the web browser comprises recognizing the URL of the client computer which is transferred with the copier web page.

63. (New) A method for providing a web page interface for a printer, comprising:

entering a URL corresponding with the printer into a web browser;

transferring an HTTP command that specifies the entered URL, from the web browser over a communication path;

receiving the HTTP command, via the communication path, through a network interface in the printer;

recognizing the URL contained in the HTTP command as corresponding with the printer;

generating, with a web server embedded in the printer, a web page that enables control functions for the printer to be initiated from the web browser;

specifying the URL corresponding with the web browser;

transferring the web page and the specified URL from the printer via the communication path;

recognizing the specified URL corresponding with the web browser;

receiving the web page with the web browser; and

rendering the web page with the web browser.

64. (New) The method of claim 63 wherein the web page defines control buttons that enable the control functions.

65. (New) The method of claim 63 wherein the HTTP command is used to obtain information from the printer.

66. (New) The method of claim 63 wherein the HTTP command is used to obtain status information from the printer.

67. (New) The method of claim 63 wherein the HTTP command is used to transfer information to the printer.

68. (New) The method of claim 63 wherein the HTTP command is used to transfer information to the printer to control functions of the printer.

69. (New) The method of claim 63 wherein the HTTP command is used to transfer information to the printer to control operating states of the printer.

70. (New) The method of claim 63 further comprising controlling device-specific functions of the printer via a control/monitor path.

71. (New) The method of claim 63 further comprising monitoring a set of information pertaining to the printer via a control/monitor path.

72. (New) A method for providing a web page interface for a fax machine, comprising:

entering a URL corresponding with the fax machine into a web browser;

transferring an HTTP command that specifies the entered URL, from the web browser over a communication path;

receiving the HTTP command, via the communication path, through a network interface in the fax machine;

recognizing the URL contained in the HTTP command as corresponding with the fax machine;

generating, with a web server embedded in the fax machine, a web page that enables control functions for the fax machine to be initiated from the web browser;

specifying the URL corresponding with the web browser;

transferring the web page and the specified URL from the fax machine via the communication path;

recognizing the specified URL corresponding with the web browser;

receiving the web page with the web browser; and

rendering the web page with the web browser.

73. (New) The method of claim 72 wherein the web page defines control buttons that enable the control functions.

74. (New) The method of claim 72 wherein the HTTP command is used to obtain information from the fax machine.

75. (New) The method of claim 72 wherein the HTTP command is used to obtain status information from the fax machine.

76. (New) The method of claim 72 wherein the HTTP command is used to transfer information to the fax machine.

77. (New) The method of claim 72 wherein the HTTP command is used to transfer information to the fax machine to control functions of the fax machine.

78. (New) The method of claim 72 wherein the HTTP command is used to transfer information to the fax machine to control operating states of the fax machine.

79. (New) The method of claim 72 further comprising controlling device-specific functions of the fax machine via a control/monitor path.

80. (New) The method of claim 72 further comprising monitoring a set of information pertaining to the fax machine via a control/monitor path.

81. (New) A method for providing a web page interface for a video player that reads video and audio information from a storage medium, comprising:

entering a URL corresponding with the video player into a web browser;

transferring an HTTP command that specifies the entered URL, from the web browser over a communication path;

receiving the HTTP command, via the communication path, through a network interface in the video player;

recognizing the URL contained in the HTTP command as corresponding with the video player;

generating, with a web server embedded in the video player, a web page that enables control functions for the video player to be initiated from the web browser;

specifying the URL corresponding with the web browser;

transferring the web page and the specified URL from the video player via the communication path;

recognizing the specified URL corresponding with the web browser;

receiving the web page with the web browser; and

rendering the web page with the web browser.

82. (New) The method of claim 81 wherein the storage medium is an optical storage medium.

83. (New) The method of claim 81 wherein the storage medium is magnetic tape.

84. (New) The method of claim 81 wherein the video player is a video player/recorder that reads and writes video and audio information to an optical storage medium.

85. (New) The method of claim 81 wherein the video player is a video player/recorder that reads and writes video and audio information to a magnetic tape storage medium.

86. (New) The method of claim 81 wherein the web page defines control buttons that enable the control functions.

87. (New) The method of claim 81 wherein the HTTP command is used to obtain information from the video player.

88. (New) The method of claim 81 wherein the HTTP command is used to obtain status information from the video player.

89. (New) The method of claim 81 wherein the HTTP command is used to transfer information to the video player.

90. (New) The method of claim 81 wherein the HTTP command is used to transfer information to the video player to control functions of the video player.

91. (New) The method of claim 81 wherein the HTTP command is used to transfer information to the video player to control operating states of the video player.

92. (New) The method of claim 81 further comprising controlling device-specific functions of the video player via a control/monitor path.

93. (New) The method of claim 81 further comprising monitoring a set of information pertaining to the video player via a control/monitor path.

94. (New) A method for providing a web page interface for a television, comprising:

entering a URL corresponding with the television into a web browser;

transferring an HTTP command that specifies the entered URL, from the web browser over a communication path;

receiving the HTTP command, via the communication path, through a network interface in the television;

recognizing the URL contained in the HTTP command as corresponding with the television;

generating, with a web server embedded in the television, a web page that enables control functions for the television to be initiated from the web browser;

specifying the URL corresponding with the web browser;

transferring the web page and the specified URL from the television via the communication path;

recognizing the specified URL corresponding with the web browser;

receiving the web page with the web browser; and

rendering the web page with the web browser.

95. (New) The method of claim 94 wherein the web page defines control buttons that enable the control functions.

96. (New) The method of claim 94 wherein the HTTP command is used to obtain information from the television.

97. (New) The method of claim 94 wherein the HTTP command is used to obtain status information from the television.

98. (New) The method of claim 94 wherein the HTTP command is used to transfer information to the television.

99. (New) The method of claim 94 wherein the HTTP command is used to transfer information to the television to control functions of the television.

100. (New) The method of claim 94 wherein the HTTP command is used to transfer information to the television to control operating states of the television.

101. (New) The method of claim 94 further comprising controlling device-specific functions of the television via a control/monitor path.

102. (New) The method of claim 94 further comprising monitoring a set of information pertaining to the television via a control/monitor path.

103. (New) A method for providing a web page interface for a thermostat, comprising:

entering a URL corresponding with the thermostat into a web browser;

transferring an HTTP command that specifies the entered URL, from the web browser over a communication path;

receiving the HTTP command, via the communication path, through a network interface in the thermostat;

recognizing the URL contained in the HTTP command as corresponding with the thermostat;

generating, with a web server embedded in the thermostat, a web page that enables control functions for the thermostat to be initiated from the web browser;

specifying the URL corresponding with the web browser;

transferring the web page and the specified URL from the thermostat via the communication path;

recognizing the specified URL corresponding with the web browser;

receiving the web page with the web browser; and

rendering the web page with the web browser.

104. (New) The method of claim 103 wherein the web page defines control buttons that enable the control functions.

105. (New) The method of claim 103 wherein the HTTP command is used to obtain information from the thermostat.

106. (New) The method of claim 103 wherein the HTTP command is used to obtain status information from the thermostat.

107. (New) The method of claim 103 wherein the HTTP command is used to transfer information to the thermostat.

108. (New) The method of claim 103 wherein the HTTP command is used to transfer information to the thermostat to control functions of the thermostat.

109. (New) The method of claim 103 wherein the HTTP command is used to transfer information to the thermostat to control operating states of the thermostat.

110. (New) The method of claim 103 further comprising controlling device-specific functions of the thermostat via a control/monitor path.

111. (New) The method of claim 103 further comprising monitoring a set of information pertaining to the thermostat via a control/monitor path.

112. (New) A method for providing a web page interface for a refrigerator, comprising:

entering a URL corresponding with the refrigerator into a web browser;

transferring an HTTP command that specifies the entered URL, from the web browser over a communication path;

receiving the HTTP command, via the communication path, through a network interface in the refrigerator;

recognizing the URL contained in the HTTP command as corresponding with the refrigerator;

generating, with a web server embedded in the refrigerator, a web page that enables control functions for the refrigerator to be initiated from the web browser;

specifying the URL corresponding with the web browser;

transferring the web page and the specified URL from the refrigerator via the communication path;

recognizing the specified URL corresponding with the web browser;

receiving the web page with the web browser; and

rendering the web page with the web browser.

113. (New) The method of claim 112 wherein the web page defines control buttons that enable the control functions.

114. (New) The method of claim 112 wherein the HTTP command is used to obtain information from the refrigerator.

115. (New) The method of claim 112 wherein the HTTP command is used to obtain status information from the refrigerator.

116. (New) The method of claim 112 wherein the HTTP command is used to transfer information to the refrigerator.

117. (New) The method of claim 112 wherein the HTTP command is used to transfer information to the refrigerator to control functions of the refrigerator.

118. (New) The method of claim 112 wherein the HTTP command is used to transfer information to the refrigerator to control operating states of the refrigerator.

119. (New) The method of claim 112 further comprising controlling device-specific functions of the refrigerator via a control/monitor path.

120. (New) The method of claim 112 further comprising monitoring a set of information pertaining to the refrigerator via a control/monitor path.

121. (New) A method for providing a web page interface for a washing machine, comprising:

entering a URL corresponding with the washing machine into a web browser;

transferring an HTTP command that specifies the entered URL, from the web browser over a communication path;

receiving the HTTP command, via the communication path, through a network interface in the washing machine;

recognizing the URL contained in the HTTP command as corresponding with the washing machine;

generating, with a web server embedded in the washing machine, a web page that enables control functions for the washing machine to be initiated from the web browser;

specifying the URL corresponding with the web browser;

transferring the web page and the specified URL from the washing machine via the communication path;

recognizing the specified URL corresponding with the web browser;

receiving the web page with the web browser; and

rendering the web page with the web browser.

122. (New) The method of claim 121 wherein the web page defines control buttons that enable the control functions.

123. (New) The method of claim 121 wherein the HTTP command is used to obtain information from the washing machine.

124. (New) The method of claim 121 wherein the HTTP command is used to obtain status information from the washing machine.

125. (New) The method of claim 121 wherein the HTTP command is used to transfer information to the washing machine.

126. (New) The method of claim 121 wherein the HTTP command is used to transfer information to the washing machine to control functions of the washing machine.

127. (New) The method of claim 121 wherein the HTTP command is used to transfer information to the washing machine to control operating states of the washing machine.

128. (New) The method of claim 121 further comprising controlling device-specific functions of the washing machine via a control/monitor path.

129. (New) The method of claim 121 further comprising monitoring a set of information pertaining to the washing machine via a control/monitor path.

130. (New) A method for providing a web page interface for a disk drive, comprising:

entering a URL corresponding with the disk drive into a web browser;

transferring an HTTP command that specifies the entered URL, from the web browser over a communication path;

receiving the HTTP command, via the communication path, through a network interface in the disk drive;

recognizing the URL contained in the HTTP command as corresponding with the disk drive;

generating, with a web server embedded in the disk drive, a web page that enables control functions for the disk drive to be initiated from the web browser;

specifying the URL corresponding with the web browser;

transferring the web page and the specified URL from the disk drive via the communication path;

recognizing the specified URL corresponding with the web browser;

receiving the web page with the web browser; and

rendering the web page with the web browser.

131. (New) The method of claim 130 wherein the web page defines control buttons that enable the control functions.

132. (New) The method of claim 130 wherein the HTTP command is used to obtain information from the disk drive.

133. (New) The method of claim 130 wherein the HTTP command is used to obtain status information from the disk drive.

134. (New) The method of claim 130 wherein the HTTP command is used to transfer information to the disk drive.

135. (New) The method of claim 130 wherein the HTTP command is used to transfer information to the disk drive to control functions of the disk drive.

136. (New) The method of claim 130 wherein the HTTP command is used to transfer information to the disk drive to control operating states of the disk drive.

137. (New) The method of claim 130 further comprising controlling device-specific functions of the disk drive via a control/monitor path.

138. (New) The method of claim 130 further comprising monitoring a set of information pertaining to the disk drive via a control/monitor path.

139. (New) A method for providing a web page interface for an oscilloscope, comprising:

entering a URL corresponding with the oscilloscope into a web browser;

transferring an HTTP command that specifies the entered URL, from the web browser over a communication path;

receiving the HTTP command, via the communication path, through a network interface in the oscilloscope;

recognizing the URL contained in the HTTP command as corresponding with the oscilloscope;

generating, with a web server embedded in the oscilloscope, a web page that enables control functions for the oscilloscope to be initiated from the web browser;

specifying the URL corresponding with the web browser;

transferring the web page and the specified URL from the oscilloscope via the communication path;

recognizing the specified URL corresponding with the web browser;

receiving the web page with the web browser; and

rendering the web page with the web browser.

140. (New) The method of claim 139 wherein the web page defines control buttons that enable the control functions.

141. (New) The method of claim 139 wherein the HTTP command is used to obtain information from the oscilloscope.

142. (New) The method of claim 139 wherein the HTTP command is used to obtain status information from the oscilloscope.

143. (New) The method of claim 139 wherein the HTTP command is used to transfer information to the oscilloscope.

144. (New) The method of claim 139 wherein the HTTP command is used to transfer information to the oscilloscope to control functions of the oscilloscope.

145. (New) The method of claim 139 wherein the HTTP command is used to transfer information to the oscilloscope to control operating states of the oscilloscope.

146. (New) The method of claim 139 further comprising controlling device-specific functions of the oscilloscope via a control/monitor path.

147. (New) The method of claim 139 further comprising monitoring a set of information pertaining to the oscilloscope via a control/monitor path.

148. (New) A method for providing a web page interface for a spectrum analyzer, comprising:

entering a URL corresponding with the spectrum analyzer into a web browser;

transferring an HTTP command that specifies the entered URL, from the web browser over a communication path;

receiving the HTTP command, via the communication path, through a network interface in the spectrum analyzer;

recognizing the URL contained in the HTTP command as corresponding with the spectrum analyzer;

generating, with a web server embedded in the spectrum analyzer, a web page that enables control functions for the spectrum analyzer to be initiated from the web browser;

specifying the URL corresponding with the web browser;

transferring the web page and the specified URL from the spectrum analyzer via the communication path;

recognizing the specified URL corresponding with the web browser;

receiving the web page with the web browser; and

rendering the web page with the web browser.

149. (New) The method of claim 148 wherein the web page defines control buttons that enable the control functions.

150. (New) The method of claim 148 wherein the HTTP command is used to obtain information from the spectrum analyzer.

151. (New) The method of claim 148 wherein the HTTP command is used to obtain status information from the spectrum analyzer.

152. (New) The method of claim 148 wherein the HTTP command is used to transfer information to the spectrum analyzer.

153. (New) The method of claim 148 wherein the HTTP command is used to transfer information to the spectrum analyzer to control functions of the spectrum analyzer.

154. (New) The method of claim 148 wherein the HTTP command is used to transfer information to the spectrum analyzer to control operating states of the spectrum analyzer.

155. (New) The method of claim 148 further comprising controlling device-specific functions of the spectrum analyzer via a control/monitor path.

156. (New) The method of claim 148 further comprising monitoring a set of information pertaining to the spectrum analyzer via a control/monitor path.

**REMARKS**

The specification has been amended to correct some typographical errors. New claims have been added to cover various embodiments of the invention. No new matter has been added. Applicants respectfully request allowance of this application.

Respectfully submitted,

**Chandrasekar Venkatraman, et al.**

BY: _____

**Thomas X. Li**
Reg. No. **37,079**
Date: **May 25, 2001**
Tel. No.: **(650) 857-5972**

Hewlett-Packard Company
Legal Department, M/S 20BN
P.O. Box 10301
Palo Alto, CA 94303-0890

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Page 5, first paragraph

A solution for providing widely accessible, low cost and enhanced user interface functions for a device is disclosed. The solution involves embedding web access functionality into the device including a web server that provides a device web page. The device includes an embedded network interface that enables access to the device web page by a web browser. A user of the web browser accesses the user interface functions for the device through the device web page. The web server functionality may be implemented with existing circuitry in a device, such as an [exiting] existing processor, memory, and input/output circuitry that normally perform device-specific functions, thereby avoiding the extra cost and space required for dedicated web server hardware.

Page 11, second paragraph

In one embodiment, the device 10 is a printer device wherein the processor 200 and the memory 210 [preform] perform image rendering functions and the device-specific hardware 300 includes printer hardware and associated circuitry and wherein the input/output circuitry 220 provides network access to the printer device 10. The web server functionality is embedded into the printer device 10 by providing software or firmware for the processor 200 and by utilizing space available in the memory 210 and by using the existing input/output circuitry 220 such as Ethernet circuitry to transfer HTML files.

Page 12, second paragraph

In yet another embodiment, the device 10 is a washing machine wherein the processor 200 and the memory 210 [preform] perform functions for controlling wash cycles. The device-specific hardware 300 includes hardware such as motors, valves, sensors, and associated circuitry. The web server functionality is embedded into the washing machine 10 by providing software or firmware for the processor 200 and by utilizing space available in the memory 210 and by adding the input/output circuitry to the [video] device 10.

Page 20, first paragraph

The web page 18 for the printer may also include manuals, parts lists, and other associated publications. These publications may be stored within the device 10 in, for example, a nonvolatile memory, or may be referenced elsewhere via hyperlinks contained in the web page 18. These publications contain dynamic information such as updated manuals as well as new and updated software driver routines for the video device 10.